

ABSTRACT

An optical amplification method which includes a spectral filtering method for selecting one of several pre-recorded spectral filter patterns and applies this filter to the spectral distribution of a multi-wavelength optical signal transmitted from an input to an output fiber. Optical filtering may be accomplished using free-space bulk optical diffractive wavelength demultiplexing, combined with a fixed (permanent) spatial pattern located in the spectrally dispersed image plane, to transfer to the optical output fiber the input signal with its spectrum selectively attenuated.